In the Claims

This listing of claims replaces all prior versions and listings of claims:

1. (Currently Amended) A complementary type magnetic storage device ~~of complementary type~~ for storing ~~storage~~ data contrary to each other in a first ferromagnetic tunnel junction element and a second ferromagnetic tunnel junction element, respectively, ~~in which~~ said magnetic storage device ~~using said ferromagnetic tunnel junction elements is characterized in that~~comprising:

a semiconductor substrate with said first ferromagnetic tunnel junction element and said second ferromagnetic tunnel junction element ~~are~~ formed adjacently thereon ~~on a semiconductor substrate~~;

first writing lines ~~are~~ wound around said first ferromagnetic tunnel junction element ~~like~~ in a coil configuration ~~and~~; and

second writing lines ~~are~~ wound around said second ferromagnetic tunnel junction element ~~like~~ in a coil configuration,[[;]]

wherein,

~~a winding direction of~~ said first writing lines and ~~a winding direction of~~ said second writing lines are wound reversed with respect to each other.

2. (Currently Amended) The magnetic storage device ~~using a ferromagnetic tunnel junction element according to~~ of claim 1, ~~characterized in that~~ further comprising:

a start-end portion of said second writing lines is connected to a terminal-end portion of said first writing lines to be a sequence of writing lines.

3. (Currently Amended) The magnetic storage device ~~according to~~ of claim 1 ~~or claim 2, characterized in that~~ wherein:

said first writing lines and said second writing lines have parallel wiring portions ~~formed, which are~~ extending in a direction ~~substantially~~ parallel to a magnetization direction of fixed magnetization layers at positions immediately above or immediately below said first ferromagnetic tunnel junction element and said second ferromagnetic tunnel junction element.

4. (Currently Amended) The magnetic storage device ~~using a ferromagnetic tunnel junction element according to~~ of claim 1 ~~or claim 2, characterized in that~~, wherein:

said first writing lines and said second writing lines have upper and lower writing lines extending in a direction ~~substantially~~ perpendicular to a magnetization direction of said fixed magnetization layers of said first ferromagnetic tunnel junction element and said second ferromagnetic tunnel junction element[[,]] at positions above and below said first ferromagnetic tunnel junction element and said second ferromagnetic tunnel junction element; and

~~in addition, in~~ at least one of said upper and lower writing lines~~, there are provided~~ comprises a parallel wiring ~~portions~~ portion extending in a direction ~~substantially~~ parallel to a magnetization direction of said fixed magnetization layers at positions immediately above or immediately below said first ferromagnetic tunnel junction element and said second ferromagnetic tunnel junction element.

5. (New) The magnetic storage device of claim 2, wherein:

said first writing lines and said second writing lines comprising parallel wiring portions extending in a direction parallel to a magnetization direction of fixed magnetization layers at positions immediately above or immediately below said first ferromagnetic tunnel junction element and said second ferromagnetic tunnel junction element.

6. (New) The magnetic storage device of claim 2, wherein:

said first writing lines and said second writing lines comprise upper and lower writing lines extending in a direction perpendicular to a magnetization direction of said fixed magnetization layers of said first ferromagnetic tunnel junction element and said second ferromagnetic tunnel junction element at positions above and below said first ferromagnetic tunnel junction element and said second ferromagnetic tunnel junction element; and

said upper and lower writing lines extend in a direction parallel to a magnetization direction of said fixed magnetization layers at positions immediately above or immediately below said first ferromagnetic tunnel junction element and said second ferromagnetic tunnel junction element.

7. (New) A magnetic storage device for storing data in configurations contrary to each other, said magnetic storage device comprising:

a first ferromagnetic tunnel junction element and a second ferromagnetic tunnel junction element adjacently positioned on a semiconductor substrate;

a first writing line coiled around said first ferromagnetic tunnel junction element, the first writing line having a first orientation; and

a second writing line coiled around said second ferromagnetic tunnel junction element, the second writing line having a second orientation that is different than the first orientation.

8. (New) The magnetic storage device according to claim 7, wherein the first writing line and the second writing line run in different directions.

9. (New) The magnetic storage device according to claim 7, wherein the first writing line and the second writing line are coiled reversed with respect to each other.

10. (New) The magnetic storage device according to claim 7, wherein the first orientation of the first writing line and the second orientation of the second writing line is such that a first direction of a first magnetic force generated when storage data is written in the first ferromagnetic tunnel junction element is different than a second direction of a second magnetic force generated when storage data is written in the second ferromagnetic tunnel junction element.

11. (New) The magnetic storage device according to claim 7, wherein the first orientation of the first writing line and the second orientation of the second writing line is such that a flow direction along the first writing line is opposite to a flow direction along the second writing line.

12. (New) The magnetic storage device according to claim 7, further comprising:

a closed loop formed by the first ferromagnetic tunnel junction element and second

ferromagnetic tunnel junction element having a writing direction along the first writing line opposite to the writing direction along the second writing line.

13. (New) A method of manufacturing a magnetic storage device for storing data in configurations contrary to each other, the method comprising:

forming a first ferromagnetic tunnel junction element and a second ferromagnetic tunnel junction element adjacently on a semiconductor;

winding a first writing line around said first ferromagnetic tunnel junction element in a first direction; and

winding a second writing line around said second ferromagnetic tunnel junction element in a second direction that is different than the first direction so that data is stored in opposite directions along the first writing line and the second writing line.